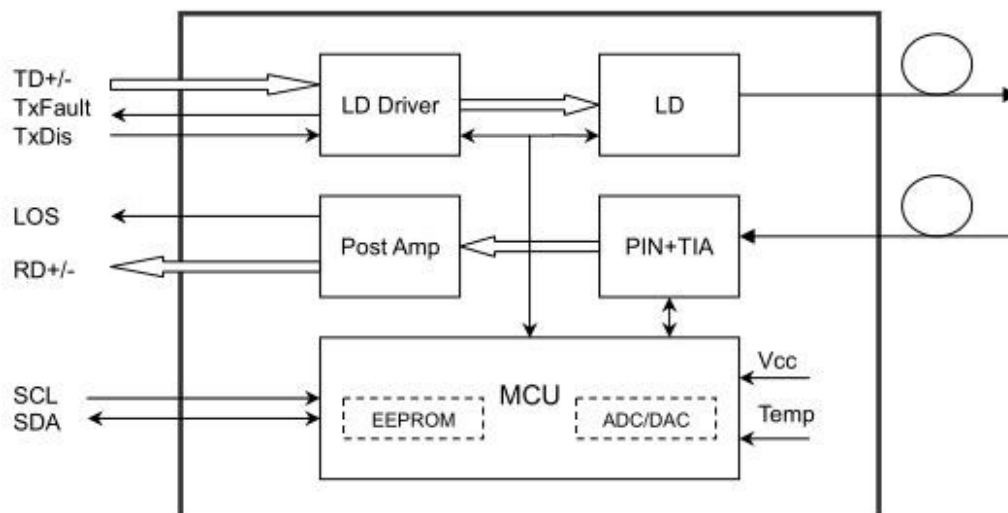


## Оптический трансивер BZ-SFP-LX-10

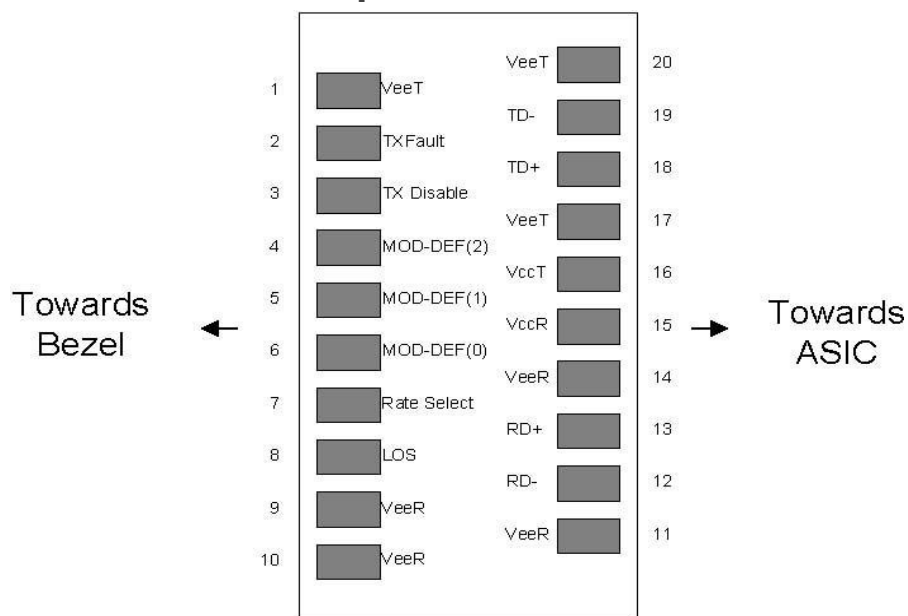
### Основные характеристики

- Оптический трансивер SFP, скорость передачи данных 1.25Gbps;
- Лазер FP, длина волны 1310nm, расстояние передачи – 10 км;
- Совместимость с SFP MSA и SFF-8472, разъем duplex LC;
- Соответствие SONET OC-24-LR-1;
- Соответствие RoHS;
- +3.3V single power supply;
- Диапазон рабочих температур: 0°C ~ +70°C, -20°C +85°C (индустриальный);
- Цифровой диагностический мониторинг: Внутренняя калибровка или внешняя калибровка.

### Блок-схема модуля



## Распиновка блока разъемов на главной плате



## Абсолютные максимальные рейтинги

Parameter	Symbol	Min	Typ	Max	Unit	Ref.
Maximum Supply Voltage	Vcc	-0.5		4.7	V	
Storage Temperature	TS	-40		85	°C	
Case Operating Temperature	TOP	0		70	°C	

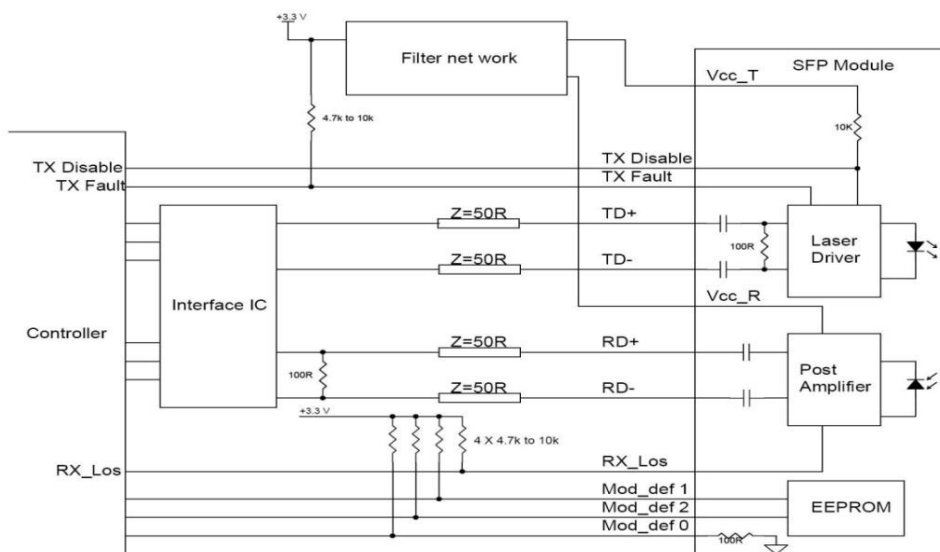
## Оптические характеристики

Parameter	Symbol	Min	Typ	Ma	Unit	Ref.
<b>Transmitter</b>						
Output Opt. Pwr (End of Life)	POUT	-9.0		-3.0	dBm	1
Optical Wavelength	$\lambda$	1270	1310	1360	nm	
Wavelength Temperature Dependence			0.08	0.125	nm/°C	
Spectral Width (-20dB)	$\sigma$			3.0	nm	
Optical Extinction Ratio	ER	10			dB	
Sidemode Suppression ratio	SSRmin	30			dB	
Optical Rise/Fall Time	tr/ tf		100	160	ps	
RIN	RIN			-120	dB/Hz	
Transmitter Jitter (peak to peak)				100	ps	
<b>Receiver</b>						
Average Rx Sensitivity @ Gigabit Ethernet	RSENS3			-24.0	dBm	2
Maximum Input Power	PMAX	-3.0			dBm	
Optical Center Wavelength	$\lambda_C$	1260	1310	1620	nm	
LOS De -Assert	LOSD			-26	dBm	
LOS Assert	LOSA	-40			dBm	
LOS Hysteresis			1.0		dB	
Receiver Jitter Generation @1.25Gbps				160	ps	3

## Схема основной платы с выводами

Pin	Symbol	Name/Description	Ref.
1	$V_{EET}$	Transmitter Ground (Common with Receiver Ground)	1
2	$T_{FAULT}$	Transmitter Fault.	2
3	$T_{DIS}$	Transmitter Disable. Laser output disabled on high or open.	3
4	MOD_DEF(2)	Module Definition 2. Data line for Serial ID.	4
5	MOD_DEF(1)	Module Definition 1. Clock line for Serial ID.	4
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	4
7	Rate Select	No connection required	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	5
9	$V_{EER}$	Receiver Ground (Common with Transmitter Ground)	1
10	$V_{EER}$	Receiver Ground (Common with Transmitter Ground)	1
11	$V_{EER}$	Receiver Ground (Common with Transmitter Ground)	1
12	RD-	Receiver Inverted DATA out. AC Coupled	
13	RD+	Receiver Non-inverted DATA out. AC Coupled	
14	$V_{EER}$	Receiver Ground (Common with Transmitter Ground)	1
15	$V_{CCR}$	Receiver Power Supply	
16	$V_{CCT}$	Transmitter Power Supply	
17	$V_{EET}$	Transmitter Ground (Common with Receiver Ground)	1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	$V_{EET}$	Transmitter Ground (Common with Receiver Ground)	1

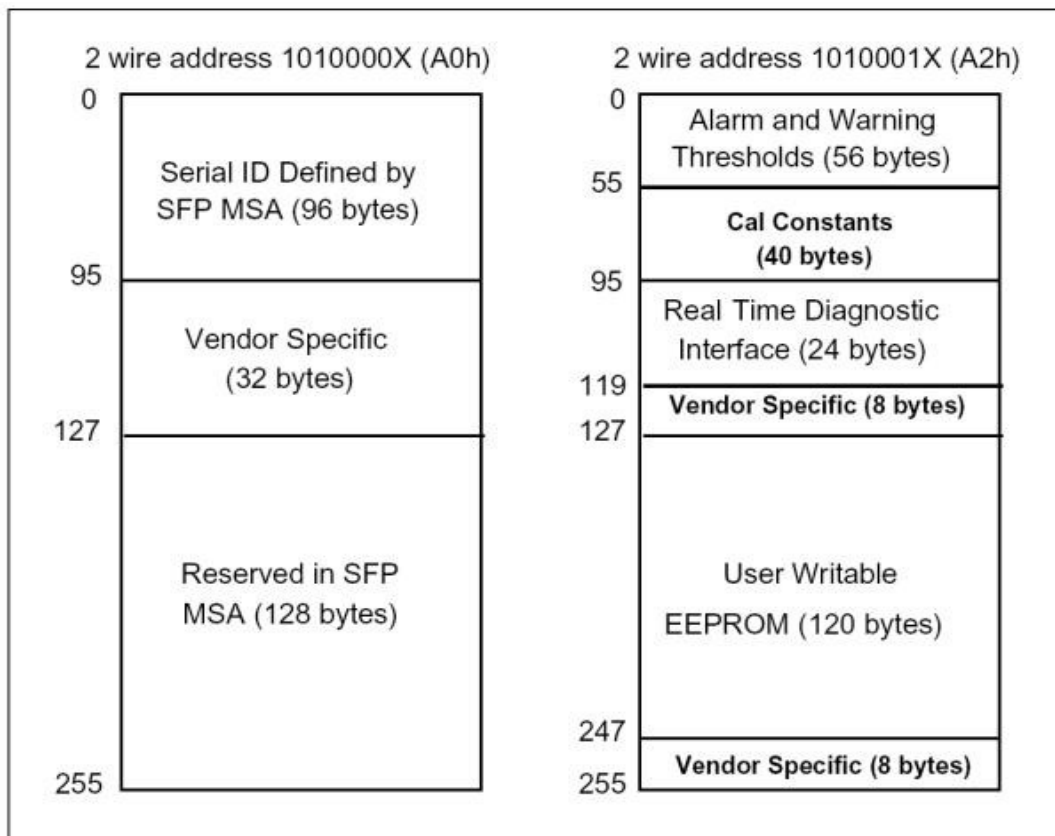
## Типовая схема интерфейса



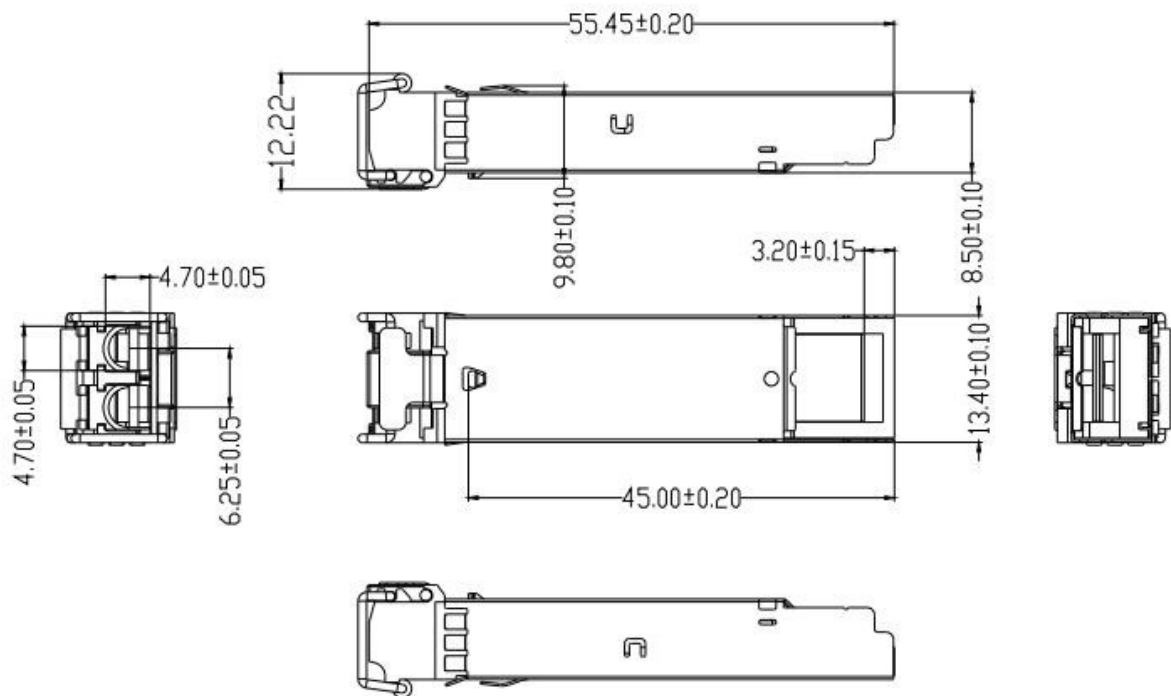
## Характеристики электрического интерфейса

Parameter	Symbol	Min	Typ	Max	Unit	Ref.
Supply Voltage	V <sub>cc</sub>	3.15	3.3	3.6	V	
Supply Current	I <sub>cc</sub>		185	250	mA	
<b>Transmitter</b>						
Input differential impedance	R <sub>in</sub>		100		Ω	1
Single ended data input swing	V <sub>in,pp</sub>	250		1200	mV	
Transmit Disable Voltage	VD	V <sub>cc</sub> -1.3		V <sub>cc</sub>	V	
Transmit Enable Voltage	VEN	V <sub>ee</sub>		V <sub>ee</sub> + 0.8	V	2
Transmit Disable Assert Time				10	us	
<b>Receiver</b>						
Single ended data output swing	V <sub>out,pp</sub>	250		800	mV	3
Data output rise time	t <sub>r</sub>		100	175	ps	4
Data output fall time	t <sub>f</sub>		100	175	ps	4
LOS Fault	VLOS fault	V <sub>cc</sub> -0.5		V <sub>cc</sub> HOS T	V	5
LOS Normal	VLOS norm	V <sub>ee</sub>		V <sub>ee</sub> +0.5	V	5
Power Supply Rejection	PSR	100			mVpp	6

## Функции цифровой диагностики



## Габариты



## Соответствие нормативным требованиям

Feature	Reference	Performance
Electrostatic discharge (ESD)	IEC/EN 61000-4-2	Compatible with standards
Electromagnetic Interference (EMI)	FCC Part 15 Class B EN 55022 Class B (CISPR 22A)	Compatible with standards
Laser Eye Safety	FDA 21CFR 1040.10, 1040.11 IEC/EN 60825-1, 2	Class 1 laser product
Component Recognition	IEC/EN 60950, UL	Compatible with standards
ROHS	2002/95/EC	Compatible with standards
EMC	EN61000-3	Compatible with standards